Amendments to the Specification:

Please replace the paragraph beginning on Page 4, line 12 with:

The simplest ~~coanda~~ Coanda nozzle 402 described in the Day publication is shown in FIG. 4. Generally, the nozzle 402 comprises a forward housing 407, rear housing 408 and central divider 403. Air is delivered by a fan to an air delivery duct 400 and led through the input nozzle 401 to output nozzle 410. At this point the airflow cross section is reduced so that air flowing through the nozzle 402 does so at high speed. The air may also have a rotational component, as there is no provision for straightening the airflow after it leaves the air pumping fan. The central divider 403 swells out in the terminating region of the output nozzle 402 and has a smoothly curved surface 404 for the air to flow around into the air return duct using the Coanda effect.

Please replace the paragraph beginning on Page 34, line 11 with:

Another preventative measure against pluming is to extend the outer tube 1901 inward with an additional sleeve 1903 as shown in FIG. [[19B]] 19A. The additional barrier created by the additional sleeve 1903 helps guide air around inner donut 1902 into a toroidal vortex. Further, the nozzle can be placed against a surface 1904 without impeding the toroidal vortex flow. FIG [[19A]] 19B depicts

airflow when the nozzle is placed against a surface without the additional sleeve. As shown, airflow is blocked. Thus the efficiency of the toroidal vortex nozzle is not lost.

Please replace the paragraph beginning on Page 38, line 1 with:

The horizontal cross-section of FIG. 22B illustrates the circular shape of the housing. The cylindrical walls of the housing maintain the vortex airflow. Attached to the cylindrical housing is the dust collector 2205. The dust collector 2205 is a sealed container in which debris ejected from the vortex ~~accumulate~~ accumulates. The housing has an opening in its outer wall through which dust 2206 may pass. As shown in the horizontal cross, the edge of the opening facing into the direction of airflow bends slightly inwards to facilitate dust collection. The dust collector 2205 is attached to the outer and lower walls of the housing as shown in FIG [[22]] 22A. The walls of the outer tube 2202 bend slightly outward to facilitate smooth airflow from the chamber 2207 to the annular exit duct 2203 between inner tube 2201 and outer tube 2202. Nevertheless, other arrangements to facilitate airflow may just as well be used. The inner tube 2201 and outer tube 2202 may extend downward and terminate with a toroidal vortex nozzle as depicted in FIG. 13. Although this is the preferred embodiment, the centrifugal dust separator is capable of functioning without such a nozzle. Any other concentric nozzle design may be used. In addition, any system that

supplies an input flow to inner tube 2201 and receives an output flow from annular duct formed between inner tube 2201 and outer tube 2202 is capable of utilizing the separator.

Please replace the paragraph beginning on Page 41, line 3 with:

To adapt the aforementioned developments into a form which can be conveniently used, two variations including cannister and upright vacuum cleaners are disclosed and depicted in FIGS. 23 and 24, respectively. The improved centrifugal dust separator comprising impeller 2302, dust container 2318, and motor 2315 is contained in a cannister housing 2317. The housing 2317 is equipped with a handle 2301 in order to move and lift the cannister conveniently. The tubing of the separator leads into hosing 2319. Hose coupling 2303 couples hosing 2319 to the cannister housing 2317. This hosing 2319 is flexible to allow the vacuum to be used in a variety of situations. The concentric hosing 2319 leads to a second set of tubing comprising inner tube 2306 and outer tube 2305. The hosing [[2315]] <u>2319</u> is coupled to inner tube 2306 and outer tube 2305 with hose coupling 2320. The end of the second set of tubing ends in a toroidal vortex nozzle comprising inner donut 2308 and outer fairing 2310. The tubing may be hinged such that the nozzle may be tilted at various angles. The hinge 2309 must be configured such that incoming and outgoing airflow is maintained. The toroidal vortex nozzle may be adapted

for more efficient use. A wheel 2313 may be provided such that the nozzle may smoothly traverse a surface 2316. The wheel 2313 may also be adjustable as to allow the nozzle to be held at varying distances from a surface. For such applications such as cleaning carpets and floors, the nozzle may be equipped with a rotating brush 2312. The rotating brush 2312 is implemented as to guide airflow into a toroidal vortex while simultaneously loosening dirt from the carpet 2314. Alternatively, the rotating brush 2312 may be set forward and the guide means of the nozzle may remain as described in previous embodiments. A motor 2311 may be provided in the nozzle to power the rotating brush 2312.

Please replace the paragraph beginning on Page 42, line 11 with:

The upright vacuum cleaner is shown in FIG. 24. The upright embodiment contains the improved centrifugal separator composed of impeller 2402, dust box 2405, and motor 2407 in an upright housing. The dust box 2405 may be extended downward to ~~effect~~ affect a larger storage capacity. A handle 2401 is implemented at the top as in conventional upright designs. The concentric tubing 2417 leads downward out of the container to the toroidal vortex nozzle composed of inner donut 2411 and outer fairing 2418. The nozzle may be hinged at 2410 as in the cannister embodiment. The nozzle may also be equipped with a brush 2412, wheel 2415, and motor 2413 as in the cannister

embodiment. To allow for a larger variety of cleaning applications, a hose connection 2409 may be implemented by splitting the concentric tubing 2417. At the split a swivel 2406 may be implemented to switch operation to the hose connection from the nozzle. A hose as described in the toroidal vortex embodiment may be removably attached to the hose connection 2409.